

DESCRIPTIONS OF NEW AND NOTES ON OTHER
AUSTRALIAN POLYPLACOPHORA.

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(Plates lxxiii.-lxxiv.)

LEPIDOPLEURUS BADIUS, *sp. nov.*

(Plate lxxiii., figs. 1-2.)

Shell small, broad in proportion to length, rather low, rounded dorsally. Sculpture uniformly grain-striate. Colour entirely ochraceous, the valve margin sometimes rust.

Anterior valve densely radially grained.

Median valves narrow with a straight posterior edge, central and jugal areas confluent, lateral areas indistinctly indicated by a slight fold. About fifty grain-rows to a valve, medially about a dozen grains are close set in a row, but wider apart from row to row, the rows longitudinal in the middle, converging at the sides, and losing their regularity on the lateral areas.

Posterior valve with central elevated apex and concave posterior slope.

Girdle beset with small chaffy scales, fringed with spicules.

Interior white, sutural plates rounded, jugal sinus very broad and shallow. Insertion plates entirely absent. Length, 6; breadth, 3.5 mm.

Station.—Under stones in sheltered pools at low water.

Habitat.—Balmoral and Shark Island (Port Jackson); Long Reef near Narrabeen. Though a rare shell, fifteen specimens were found under one small stone at Long Reef. The body of the animal is of a deep red colour.

Affinities.—Related to *L. matthewsianus*, Bednall,¹ from St. Vincent Gulf, South Australia, but distinguished by the darker colour, broader shape and coarser granules of *L. badius*, and especially by the direction of the grain-rows on the lateral areas. In *L. matthewsianus* the rows are oblique to those of the central area, but in *L. badius* they are confused. In *L. matthewsianus* the apex of the posterior valve is nearer the margin.

A more distant relation is the New Zealand *L. inquinatus*, Reeve,² in which the lateral areas are differentiated by small crowded grains set in rows oblique to those of the central area.

¹ Bednall—Proc. Malacol. Soc., vii., 1906, p. 92, pl. ix., f. 1.

² Sykes—Proc. Malacol. Soc., ii., 1896, p. 86., pl. vi., f. 4.

CHITON VAUCLUSENSIS, *sp. nov.*

(Plate lxxiv., figs. 19-23.)

Shell rather large, oblong, strongly elevated, carinated, side slope slightly curved and steep. Colour an olive buff, flamed with sepia in the pleural areas, the jugal area with sepia dots, most ribs picked out with orange or chocolate.

Anterior valve ornamented with irregular flattened pustules arranged in 20-28 radiating riblets multiplied by splitting of the fewer radii of the young shell.

Posterior valve: mucro very prominent, slightly in front of the centre, posterior slope concave, rayed with tubercular ribs similar to the head valve, but the grains rounder and flatter.

Median valves: lateral areas raised, carrying three to four prominent tuberculate ribs, the ribs tending to divide as growth proceeds. The central area furrowed by about thirty-three strong, raised, longitudinal ribs, of which the central crowns the valve, crowded medially and wider spaced distally, narrower than their deep, square cut interstices, traversing the whole jugal tract and leaving only the apex of the valve smooth.

Girdle tessellated by alternate bands of buff and bottle-green, covered with large compactly imbricating polished convex scales, obsoletely striated.

Interior pale bluish-green; sinus deep, narrow, denticulate. Anterior valve having 8, median valve 1-1, and posterior valve 12 slits; teeth finely pectinate on the edge. Eaves spongy. Length, 33; breadth, 20 mm.

Station.—On the upper side of stones in 4-5 feet of water at dead low tide.

Habitat.—Bottle and Glass Point, Vacluse, Port Jackson; two specimens.

Affinities.—Related to *Chiton limans*, Sykes, but larger, more elaborately sculptured, and differing in the lateral areas and girdle scales.

CHITON COXI, *Pilsbry.*

(Plate lxxiii., figs. 3-5.)

Chiton coxi, Pilsbry, Proc. Acad. Nat. Sci. Philadelphia, 1894, p. 85.

This species has not hitherto been figured. We therefore offer an illustration of a specimen 17 mm. long and 10 mm. broad from the Bottle and Glass Reef, Port Jackson. The consideration of it leads us to the next species.

CHITON TORRI, *sp. nov.*

(Plate lxxiii., figs. 6-11.)

The individual figured is 15 mm. long and 9 mm. broad. It was taken at Hog Bay, Kangaroo Island, S. Australia, by Dr. W. G. Torr and one of us during the Australian Association excursion of the "Governor Musgrave" in January, 1907. Hitherto it has been confused by local collectors with *C. coxi*,³ but we regard it as a distinct species which replaces and represents *C. coxi* in western waters. Instead of the usual diagnosis, it may be better defined by the following comparison with related forms.

Differential characters of *Chiton jugosus*, Gould, *C. coxi*, Pilsbry, and *C. torri*, H. & H. :—

<i>C. jugosus.</i>	<i>C. torri.</i>	<i>C. coxi.</i>
Central area—		
Ribs high, rounded, prominent, of the same width the whole length. Colour bright orange-brown. Lines 10-14 on large, 5-7 on small specimens. 5-9 on posterior valve.	Ribs low, sloping downwards, not prominent. Colour: fine line of dark olive-green. 4-6 on median valves, 3-4 on posterior.	Ribs low, sloping downwards, not prominent. Colour: fine line of dark olive-brown. 6-11 on median valves, 6 on posterior.
Sulci deep, wide, colour blue.	Sulci shallow, narrow, colour similar to main body of shell.	Sulci very shallow and broad. Colour similar to main body of shell.
Anterior valve—		
Concentrically lined, 12-14 lines.	Concentrically lined, 6-8 lines.	Smooth, finely reticulated. Colour of body of shell.
Posterior valve—		
Mucro blunt, in front of middle, posterior slope slightly concave.	Similar to <i>C. jugosus</i> , but posterior slope even less concave.	Mucro acute, central, projecting, posterior slope deeply concave.
Girdle scales—		
Large, convex, obsoletely striated, not smaller towards the outer edge.	Similar to <i>C. jugosus</i> .	Dense, small, striated, slightly convex. Smaller towards edge of girdle.
Small light coloured triangle on tail valve, extending broadly across girdle.	Very faint small triangle on tail valve, does not extend over girdle.	Light coloured triangle on tail valve not constant, and where present a light bar of even width crosses the girdle.
Tegmentum—		
Minutely punctulate.	Minutely punctulate.	Minutely reticulate.
Interior—		
8-1-12.	8-1-12.	8-1-(10-12).

³ Bednall—Proc. Malacol. Soc., ii., 1897, p. 151.

CHITON TRANSLUCENS, *sp. nov.*

(Plate lxxiv., figs. 14-18.)

Shell large, oblong, elevated, carinated, side slopes straight. Colour buff clouded with olive and sage-green and microscopically freckled with rufous, in some specimens shaded with orange-red on the lateral areas. Under the lens the whole surface finely granulated in quincunx. The general smoothness of the valves is only interrupted by a few impressed growth lines.

Posterior valve: mucro median, subprominent.

Median valves: lateral areas raised, the remoter pleural areas crossed by half-a-dozen vestigial furrows, in and about which are a few scattered eyes.

Girdle olive-green, alternately lighter and darker, narrowly edged with magenta, covered with small, finely striated, oval, polished, and densely subimbricate scales.

Interior flesh tint passing into green, sinus narrow, deep, denticulate. Anterior valve having 8, median valves 1-1, posterior valve 10 slits; teeth deeply irregularly pectinated on the edge and outside.

Specimen figured; 38 mm. long by 21 mm. broad.

Station.—Under stones in 3-5 feet of water at dead low tide.

Habitat.—Bottle and Glass Point, Vacluse, Port Jackson; Caloundra, Queensland.

Remarks.—Two specimens of this shell were found by Mr. John Brazier at the Bottle and Glass Point in 1864, one of which was sent to the British Museum, and the other is now in the Australian Museum. It was not, so far as we can ascertain, previously described. Recently Dr. W. G. Torr, of Adelaide, forwarded a specimen for identification, labelled "Vacluse," and several expeditions to that locality resulted in a fair number of specimens in all stages of growth being found. When alive, this shell is of a beautiful translucent green; it is very clean, being apparently of a nomadic disposition, and therefore less exposed to the attacks of parasites. It prefers very smooth surfaces, and shows a marked partiality for the undersides of sunken glass bottles. Two young specimens have recently been taken by Mr. Tom Iredale at Caloundra, Queensland.

ISCHNOCHITON MAYI, *Pilsbry*.

(Plate lxxiv., fig. 28.)

Ischnochiton (Haploplax) mayi, Pilsbry, *Nautilus*, 1895, viii., No. 11, p. 128.

Since this species has never been illustrated, we figure an example from Frederick Henry Bay, Tasmania, received from Mr. W. L. May. The description is in a serial known to few local workers, and we therefore reprint the following original description:—

Shell, short-oval, moderately elevated, carinated, the side slopes slightly convex. Surface smooth to the naked eye, but finely granular. Color of valves and girdle uniform black above, or slightly brownish at the beaks when eroded.

The intermediate valves have almost straight sutures, even a trifle concave in old specimens, the beaks projecting a trifle in young ones. Lateral areas distinctly raised (the diagonal distinct and rather wide), sculptured with several arcuate indistinct growth marks, sometimes showing very slight traces of coarse, low pustules, but these are hardly mentionable; all over minutely granulose in diamond pattern. Central areas with faint growth-striae anteriorly, distinctly granulose at the sides, the granules arranged to form forward converging riblets, which, though slight, are apparent on the outer half of each valve; central portion of central areas smoothish, with faint granulation only, beaks smooth. End valves sculptured like lateral areas. Valve viii. with mucro projecting, at about the anterior third; the posterior slope concave below the mucro and then straight.

Interior dull blue-green, greener behind the rather heavy valve-callus, the depth of the cavity rather lead colour. Sutural laminae small, projecting less than half the length of a valve, sinus wide. Slits in valve i., 11, valves ii. to vii., 1-1; valve viii., 12-13. Teeth sharp, smooth and short.

Girdle black, clothed with densely imbricating, coarse, convex, smooth scales.

Length 8, breadth 6 mm.; large "curled" examples would measure at least 10 mm. long. Divergence the same as in *I. smaragdinus*.

LIOLOPHURA CURTISIANA, *Smith*.

Chiton (Ischnochiton) curtisianus, Smith, Zool. Coll. Alert, 1884, p. 78, pl. vi., f. D.

Liolophura curtisiana, Pilsbry, Man. Conch., xiv., 1892, p. 242, pl. xxiv., f. 6.

Enoplochiton torri, Bastow & Gatliff, Proc. Roy. Soc. Vict., xx., 1907, p. 27, pl. iii, iv.

This shell is common near Gladstone, where Dr. Torr, Mr. T. Iredale, and one of us have gathered it. Messrs. Bastow and Gatliff appear to have overlooked the original description and to have redescribed it as above.

ACANTHOCHITES MAUGHANI, *Torr & Ashby*.

(Plate lxxiv., fig. 24-27).

Acanthochites maughani, Torr & Ashby, Trans. Roy. Soc. S. Austr., xxii., 1898, p. 218, pl. vii., f. 5.

This species, new to our coast, was taken by one of us (A.F.B.H.) at the Bottle and Glass Reef, and at Freshwater Bay, near Manly.

ACANTHOCHITES WILSONI, *Sykes*.

Acanthochites (Notoplax) wilsoni, Sykes, Proc. Malacol. Soc., ii., 1896, p. 92, pl. vi., f. 2.

This species is rarer here than in the south, two specimens from Long Reef, near Narrabeen, being all that have been found. Except in size these correspond well to examples from St. Vincent Gulf, South Australia, collected and kindly forwarded by Dr. W. G. Torr. One N. S. Wales individual measured when dry 19.5x11 mm. Pilsbry's remark, quoted by Sykes, notes that "tufts seem quite absent." When alive the girdle of our specimens was very wide and fleshy, dark purple in colour, with small sutural tufts which disappeared in drying. From this we are unable to distinguish *A. verconis*, Torr and Ashby.⁴

ACANTHOCHITES CARINATUS, *Adams & Angas*.

Acanthochites carinatus, Pilsbry, Man. Conch., xv., 1903, p. 17.

Mr. E. A. Smith regards this as identical with the European *A. discrepans*, while Dr. Pilsbry hints that a closer scrutiny may

⁴Torr and Ashby—Trans. Roy. Soc. S. Austr., xxii., 1898, p. 217, pl. vi., f. 4.

discover structural differences. No such shell is known to us from Port Jackson, and we think that, as was the case in other instances, a foreign shell was accidentally included with Angas' Sydney collection.

ACANTHOCHITES VARIABILIS, Adams & Angas.

Hanleya variabilis, Adams & Angas, Proc. Zool. Soc., 1864, p. 194.

Acanthochites (Loboplax) variabilis, Bednall, Proc. Malacol. Soc., ii., 1897, p. 156.

We can add to the fauna of New South Wales this brightly coloured and variable *Acanthochites*. It occurs generally on the coast line in the vicinity of Port Jackson and as far south as Bellambi. It affects sheltered pools and shows a preference for stones overgrown with *Halimeda*, selecting a position at or near the edge of the insertion of the stone in the sand, being rarely found underneath.